

## **BP taps root strength**

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Trees planted on the Three Crowns Golf Course are poised to do more than just create golf hazards and aesthetics -- they will also be cleaning up groundwater.

At least, that's the idea being pursued in a pilot program led by Phytokinetics Inc. of Logan, Utah.

"We're trying to give Mother Nature a boost," said Bill Stephens, government and public affairs director for BP, which owns the former Amoco Refinery grounds on which the golf course is situated. "The idea is to go to a more natural system over time."

To get to that natural system, trees with deep roots are being planted in two areas of the course to test the idea that trees may accelerate the decomposition of pollution in the soil. On the course's south side, 30 trees -- a mix of willow, poplars and black locusts -- are planted. The remaining 20 experimental trees are between the 13th and 14th fairways.

The idea is simple: The trees have deep root systems, deep enough to reach down 20 feet to the saturated area of groundwater. Petroleum hydrocarbons -- oil left over from the refinery days -- remain in the groundwater.

The roots of the trees grab the water for nourishment, and as a result, create a pump-like effect and raise the deeper groundwater to higher levels. At a higher level, just 5 feet to 10 feet below the surface, the hydrocarbons -- still in the groundwater -- are exposed to both oxygen and microbes on the trees roots. Both the oxygen and microbes work to decompose the pollutants naturally.

The science is dubbed "phytoremediation," which means using plants to treat contaminated areas. Phytokinetics Inc. specializes in this type of rehabilitation and has worked with chemical manufacturing companies all over the country.

Ari Ferro, who has been working on the Three Crowns tree project, said the effort also includes filling the soil around the tree with "zeolyte," a mineral that absorbs petroleum. The zeolyte will aid in the decomposition of petroleum, in addition to the work done by oxygen and microbes.

"This zeolyte goes all the way down (the hole for the tree) and is concentrated at the bottom," Ferro said. "We'll be determining how effective the zeolyte will be."

Complementing the zeolyte work is an intricate system of aeration tubes and a water drip system, dug into a hole 20 feet deep in the ground, to aerate the roots and supply the trees with water and nutrients at the base.

"When you plant a tree, the roots will tend to go down the hole, following the hole and water and nutrients," Ferro said. "Eventually it will get down to the saturated zone, and will use the water from the saturated zone."

The 50 trees in the phytoremediation project are just 10 percent of the 500 trees expected to be planted at Three Crowns. The course is expected to be completed in June 2005.

ADMIN RECORD

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